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Haskell et al.

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[54] **VIDEO TRANSMISSION RATE MATCHING FOR MULTIMEDIA COMMUNICATION SYSTEMS**

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[51] **Int. Cl.⁶** H04N 7/58; H04N 5/00

[52] **U.S. Cl.** 364/514 A; 348/387; 348/390

[58] **Field of Search** 364/514 A; 348/390, 348/387, 394, 395, 397, 403, 411, 413, 412, 414, 415, 416, 417, 418

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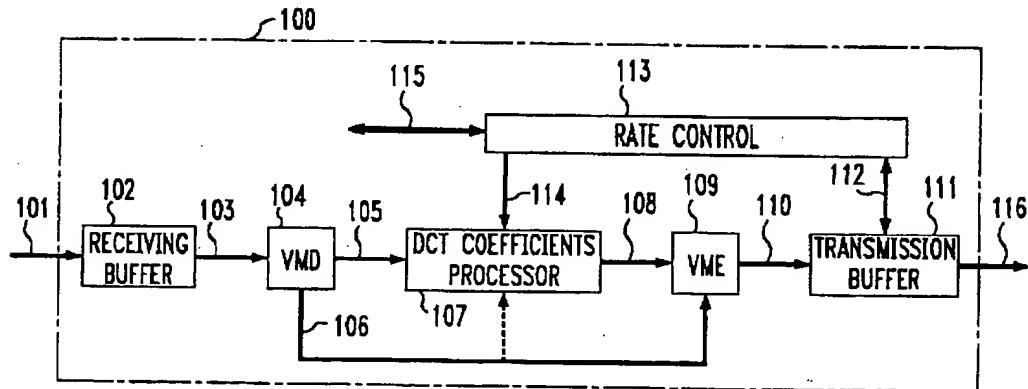
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[57] **ABSTRACT**

Digital video transmission rate matching techniques are disclosed. A bit stream rate matching apparatus includes a bit rate increasing device and a bit rate reducing device. The bit rate increasing device converts a video bit stream having a first transmission rate to a video bit stream having a second transmission rate wherein the first transmission rate is less than the second transmission rate. The bit rate reducing device converts a video bit stream having the second transmission rate to a video bit stream having the first transmission rate. The bit stream rate matching apparatus is useful in the context of a multimedia conference where a first endpoint device employs the first transmission rate and a second endpoint device employs the second transmission rate.

11 Claims, 6 Drawing Sheets



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FIG. 1

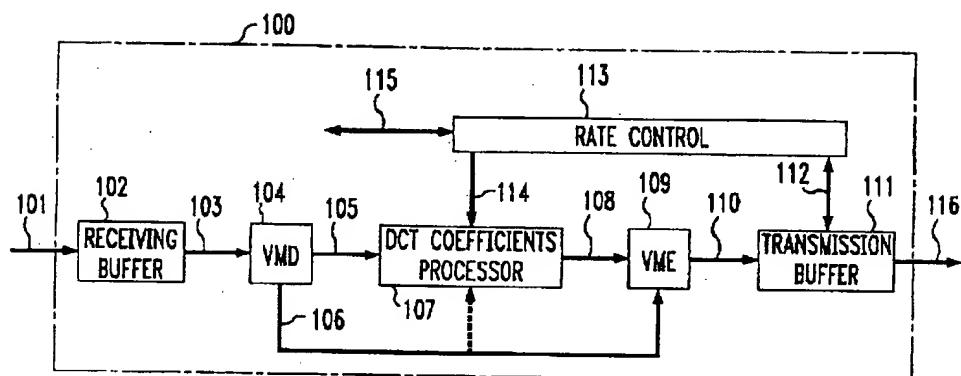
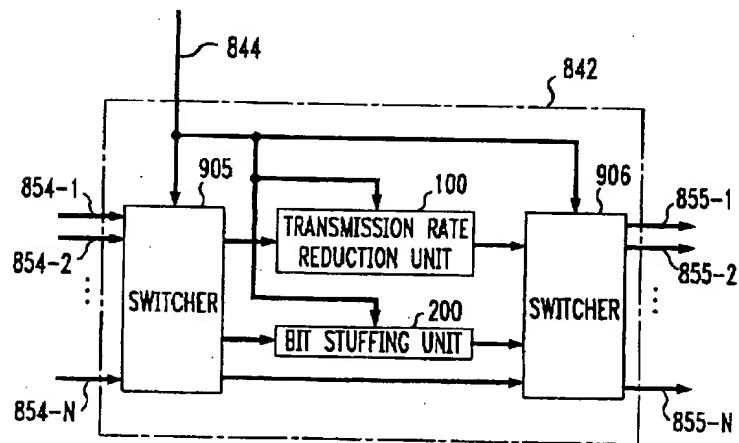


FIG. 9



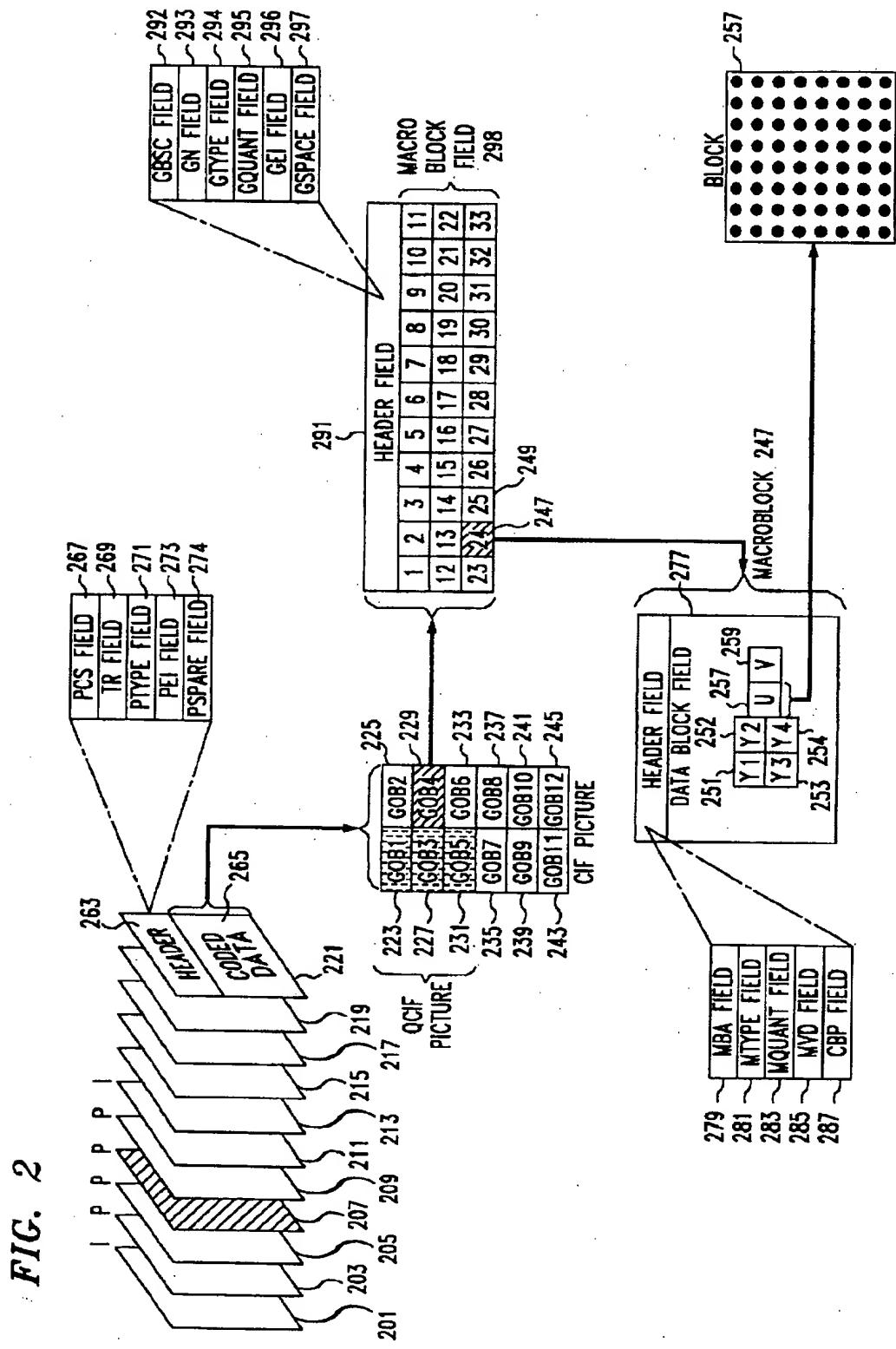


FIG. 3

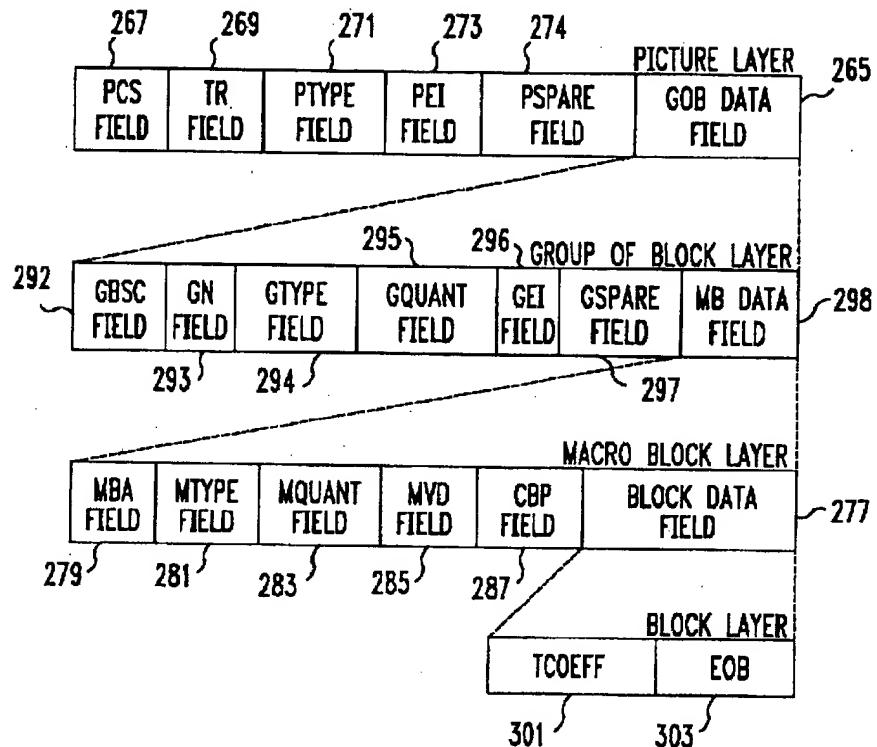


FIG. 4

DC COEFFICIENT

AC COEFFICIENTS

DC	A2	A3	A9	A10	A20	A21	A35
A1	A4	A8	A11	A19	A22	A34	A36
A5	A7	A12	A18	A23	A33	A37	A48
A6	A13	A17	A24	A32	A38	A47	A49
A14	A16	A25	A31	A39	A46	A50	A57
A15	A26	A30	A40	A45	A51	A56	A58
A27	A29	A41	A44	A52	A55	A59	A62
A28	A42	A43	A53	A54	A60	A61	A63